February 10, 2016

Dear Pacific Northwest ASCE Student Chapter:

We hope that your academic year has been progressing well! This document is your 2016 PNWSC Mailer 2, the second of three packets to be sent to each of the participating schools prior to the conference. Please read through the packet carefully and distribute copies to the appropriate individuals in your student chapter. The 2016 PNW Student Conference will be hosted by the University of Idaho on April 7-9, 2016.

The following information is enclosed:

- Receipt Confirmation
- Individual Registration Information (to be completed online)
- Student Deadlines Summary (updated)
- Student Conference Schedule (updated)
- Student Conference Event Rules

Please confirm that your student chapter has received this mailer by returning the enclosed confirmation form by March 7, 2016. Individual registration is due on the same day. The individual student fee is $100. Your timely response is appreciated to ensure that all planning, catering, and supply needs are addressed prior to the start of the conference.

Competition rules have been finalized and are included in this mailer. Please distribute them to the appropriate members of your student chapter.

If you have any questions, please feel free to contact us at ascepnw@gmail.com and we will do everything possible to reply in a timely manner. Our goal is to make the 2016 ASCE Pacific Northwest Student Conference a memorable, rewarding, and fun event for all!

We look forward to seeing you in April!

Sincerely,

Sean Iiams
President, UI ASCE Student Chapter
2016 PNWSC Chairman
ascepnw@gmail.com
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## Sponsors

We would like to acknowledge and thank the sponsors who have already contributed to the conference to make it a fun, safe, and successful event!

![Sponsor Logos]

University of Idaho Civil Engineering Department

Krista Brown
2016 ASCE Pacific Northwest Student Conference

Receipt Confirmation

Response due by March 1, 2015

Please mail this form, along with your registration fees, to the address shown below. Online registration must be completed separately; instructions are provided on the next page.

School Name: ________________________________

Final Number of Attendees: ___________

This confirms that we have received and read through the contents of Mailer 2 regarding the 2016 Pacific Northwest Student Conference.

Name: ________________________________

Signature: ________________________________

Date: ________________________________

Mailing Address:

Dr. Kevin Chang
University of Idaho
875 Perimeter Drive, MS 1022
Moscow, Idaho 83844-1022
Individual Registration

Each student attending conference must be registered by March 7, 2016. The registration fee is $100 per student. Please go to the registration page and complete the form for each student who will attend conference.

bit.ly/pnwRegister
# 2016 ASCE Pacific Northwest Student Conference
April 7-9, 2016 (Subject to Change)

## Thursday - Kibbie Dome (Moscow, ID)

<table>
<thead>
<tr>
<th>Time</th>
<th>Meals</th>
<th>Steel Bridge</th>
<th>Concrete Canoe</th>
<th>Other Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 PM</td>
<td></td>
<td>Bridge Setup</td>
<td></td>
<td>Check-in/ Registration</td>
</tr>
<tr>
<td>7:00 PM</td>
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<tr>
<td>8:00 PM</td>
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<td>9:00 PM</td>
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</tbody>
</table>

## Friday - Kibbie Dome and Idaho Commons (Moscow, ID)

<table>
<thead>
<tr>
<th>Time</th>
<th>Meals</th>
<th>Steel Bridge</th>
<th>Concrete Canoe</th>
<th>Other Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>Bridge Setup</td>
<td></td>
<td></td>
<td>Late Check-in</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Captain's Meeting</td>
<td>Captain's Meeting</td>
<td></td>
<td>Technical Paper</td>
</tr>
<tr>
<td>10:00 AM</td>
<td></td>
<td></td>
<td>Canoe Judging / Swamp Testing</td>
<td></td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Lunch</td>
<td></td>
<td></td>
<td>Environmental Competition</td>
</tr>
<tr>
<td>12:00 PM</td>
<td></td>
<td>Bridge Competition</td>
<td></td>
<td></td>
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<tr>
<td>1:00 PM</td>
<td></td>
<td></td>
<td>Canoe Design Presentations</td>
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<tr>
<td>2:00 PM</td>
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<td>Business Meeting</td>
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<tr>
<td>3:00 PM</td>
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<tr>
<td>4:00 PM</td>
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<tr>
<td>5:00 PM</td>
<td></td>
<td></td>
<td></td>
<td>UI Staff only:</td>
</tr>
<tr>
<td>6:00 PM</td>
<td></td>
<td></td>
<td>Canoe Setup</td>
<td>Knowledge Bowl / Social Activity</td>
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<tr>
<td>7:00 PM</td>
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<tr>
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</tbody>
</table>

## Saturday - Chief Timothy Park (Clarkston, WA) and Red Lion Center (Lewiston, ID)

<table>
<thead>
<tr>
<th>Time</th>
<th>Meals</th>
<th>Steel Bridge</th>
<th>Concrete Canoe</th>
<th>Other Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>Light Breakfast</td>
<td></td>
<td>Canoe Setup</td>
<td>Surveying / Volleyball / Concrete Frisbee</td>
</tr>
<tr>
<td>9:00 AM</td>
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<td>10:00 AM</td>
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<td>11:00 AM</td>
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<tr>
<td>12:00 PM</td>
<td>Lunch</td>
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<td>1:00 PM</td>
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<td>4:00 PM</td>
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<td>5:00 PM</td>
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<tr>
<td>6:00 PM</td>
<td></td>
<td></td>
<td>Canoe Races</td>
<td></td>
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<tr>
<td>7:00 PM</td>
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<tr>
<td>8:00 PM</td>
<td>Banquet and Awards</td>
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<tr>
<td>9:00 PM</td>
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</tbody>
</table>

2/10/2016
# 2016 ASCE Pacific Northwest Student Conference

## Deadlines Summary

### Participants:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 16</td>
<td>Mailer Receipt Confirmation Submitted</td>
</tr>
<tr>
<td></td>
<td>School Registration &amp; Fee Submitted</td>
</tr>
<tr>
<td>March 1</td>
<td>Daniel W. Mead Technical Paper (Emailed by 11:59 PM)</td>
</tr>
<tr>
<td>March 7</td>
<td><strong>Attendee Registration &amp; Payment Due</strong></td>
</tr>
<tr>
<td>March 18</td>
<td>Concrete Canoe Design Paper (Postmarked by 11:59 PM)</td>
</tr>
<tr>
<td>April 7-9</td>
<td>2016 Pacific Northwest Regional Conference!</td>
</tr>
</tbody>
</table>

### Host:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 1</td>
<td>Mailer I</td>
</tr>
<tr>
<td>February 10</td>
<td>Mailer II (Individual registration &amp; competition event rules)</td>
</tr>
<tr>
<td>March 23</td>
<td>Mailer III (final schedule, parking info, and updates)</td>
</tr>
</tbody>
</table>
Steel Bridge

Steel bridge rules are posted on the ASCE steel bridge website.

The Captain’s Meeting, aesthetic judging, and competition will all take place on Friday at the Kibbie Dome on the University of Idaho Campus in Moscow, ID.

No painting is allowed in the Kibbie Dome.

Concrete Canoe

Concrete canoe rules are posted on the ASCE concrete canoe website.

The Captain’s Meeting, aesthetic judging, swamp testing, and design presentations will take place on Friday at the University of Idaho campus in Moscow, ID. The concrete canoe races will take place on Saturday at Chief Timothy State Park in Clarkston, WA. Specific location information will be included in Mailer 3.

As specified in the rules, each team is required to write a design paper that covers the aspects of the canoe’s design and construction. Teams will submit their design papers and engineer’s notebook to Seth Thomas, Head Judge, at the address listed below. Submissions are to be postmarked by Friday, March 18, 2016.

Seth Thomas, P.E.
KPFF Consulting Engineers
111 SW 5th Ave, Suite 2500
Portland OR, 97204

Please email Seth (seth.thomas@kpff.com) with any questions regarding the judging process.
Technical Paper

Overview
Participation in the Technical Paper Competition is a prerequisite for invitation to the National Student Steel Bridge and Concrete Canoe Competition. Rules for the 2016 PNWSC Technical Paper Competition are aligned with the 2016 National Daniel W. Mead Student Contest. Additional details regarding this contest can be found on the ASCE website http://www.asce.org/mead-student

Topic:
When working in a foreign location, what defines the design standard which the engineer can rely on to have met his or her ethical obligation to provide a safe and sound engineering solution or design?

The following can be used to stimulate, but should in no way limit, the discussion:
Engineers today in the global setting are having to evaluate different design guides, codes, standards and practices that are available to them in the region and select the most pertinent to their specific application that will meet their obligations as a professional engineer.

- When evaluating the different codes, standards and quality requirements, how is one to determine the minimum requirements that provide a good balance between local practices versus global best practices?
- Do the local codes and standards, which may be less stringent than the standards that the engineer is typically accustomed to, meet his or her ethical obligation as the design engineer?
Rules
1. Papers are not to exceed 2,000 words in length, must be written by only one person, and should not have appeared in any publications other than in school or chapter publications. Reference citations for the papers should conform to official ASCE Journal Submission Guidelines, which can be found on the ASCE Publications website: http://ascelibrary.org/page/authors

2. Schools are allowed to submit only one paper.

3. Authors must be undergraduate students in good standing with both their ASCE student chapter and ASCE national at the time of the submission.

4. Entries should be submitted electronically as a PDF and include a cover letter from the Faculty Advisor. Cover letter must provide the name of the author, their ASCE member number, and author email address. Submit entries to ascepnw@gmail.com by 11:59 PM Pacific Standard Time on March 1, 2016.

Please note: Entry in the PNWSC technical paper competition does not constitute entry in the Daniel W. Mead competition; however, authors are highly encouraged to do so.

5. Technical paper presentations are required. Oral presentations shall be less than 10 minutes and followed by 5 minutes of questions from the panel of judges.

6. Presentations must be accompanied by visual aids. A projector and screen will be provided. Presenters may provide their own computer or other devices. Visual aids can also include a one-page handout to be left with the judges. Handout must be 8½” X 11” and may be printed on both sides in black and white.
Environmental Competition

Overview
The goal of the environmental engineering competition is to offer a problem-solving challenge, not unlike an engineering consulting firm might receive from a potential client. All teams will be given the same problem. The challenge will be to provide guidance and technical input to the client with a very short turnaround. The problem will be related to wastewater treatment and require application of engineering principles, realistic constraints, engineering judgment, and creativity.

Teams will produce a 1-2 page technical memorandum (single-spaced, 1” margins, 11 point font or larger) addressed to the client and detailing the team’s approach and solution to the problem.

Prior to the competition, teams should:
- Practice technical writing! Clear and concise writing will make you more competitive!
- Review water and wastewater concepts, equations, processes, and basic design principles.

Rules
Each school may enter as many teams of 3-4 undergraduate and/or graduate students as they like. Teams will have 90 minutes to formulate their technical memoranda. No outside help is allowed during the competition period (i.e., from engineers, faculty advisors, other teams, or students who are not on the team). At the end of the 90 minutes, teams will submit their memoranda to the judges or their representatives by copying their PDF or Word document to a competition USB drive. Judging criteria will be released before the conference.

Awards
- Most Practical
- Most Innovative/Creative

Materials allowed
- Any print or electronic reference materials
- Laptop computers and calculators
- Writing utensils
Engineering Trivia

Overview
Teams will compete with one another in an engineering knowledge competition. Topics covered will pertain to general undergraduate engineering concepts, as well as a breadth of civil engineering categories. Also, a “floater” category will be available relating to topics such as sports, politics, pop culture, etc.

The competition objective is to accrue the highest amount of points during each round. Winning teams will have demonstrated a superior breadth and depth of knowledge across multiple civil engineering topics.

Rules
Each school may enter as many teams of up to 4 undergraduate and/or graduate students as they like. Questions will be read aloud and each team will write their answers on answer sheets passed out before each round. Five rounds will be played, each with 15 to 20 questions. At the end of the round, teams will bring their answer sheets to the score keepers who will tally up the correct answers and keep track of the points.

At the end of the 5 rounds, the team with the most correct answers will be the winner. In the event of a tie, a short tie-breaker round will be played.
Surveying Competition

Overview
The purpose of this competition is to test each team’s ability to use basic distance measurement surveying skills. These surveying skills are heavily used in the professional world and are essential tools every civil engineer should possess. Distance measurement techniques are valuable to analyze and assess the landscape quickly for engineering purposes.

The surveying competition will include three distance measurement events:

**Horizontal Distance Measurement**
- **Event 1** Visual horizontal distance estimation (“eyeballing”)
  - Estimate a distance that is inaccessible to physically measure.
  - Example would be across water, high on a hill, up on a building or tree.
- **Event 2** Physical horizontal distance measurement
  - Measure a distance that is unobstructed and accessible to taping or pacing methods. (must choose method)
  - Allowable instruments and materials
    - 100 ft. surveyors tape

**Vertical Distance Measurement**
- **Event 3** Basic benchmark leveling loop.
  - Measure a vertical distance (elevation) of a specified location by conducting a benchmark leveling loop that opens and closes on a place of known/given elevation.
  - Allowable instruments and materials
    - Level
    - Tripod
    - Grade rod
    - Plumb bob
    - 100 foot surveyors tape
    - Turning point materials (stakes, hammers, etc.)

**Rules**
- One team from each university may compete. A team can consist of up to three (3) undergraduate or graduate students.
- Events may be performed in any order. Team members may split up between events.
- Teams must provide accurate, legible, and meaningful field notes such that judges are able to follow. **Field notes are required** to be turned in when the team is done with the competition. There is no restriction on the format or paper type used to record field notes – only that they are neat and easily understood.
- Each competing school is required to bring their own equipment unless special arrangements are made.
- An FE approved calculator and field note taking media are allowed for each event.
Scoring

- For each event
  - A score will be given based on accuracy of the submitted measurement compared to the “true” distance measured with an electronic distance measurement (EDM) tool.
    - Ties will be resolved with the team’s completion time of the event.
  - The team that comes the closest to the “true” value in the fastest time will be awarded 100 points. The second closest team will be awarded 90 points, third closest 80 points, and follows a ten point reduction for each subsequent team.
- The winner of the competition will be the team with the highest sum of the scores from each of the three events.
- All measurements must be reported in English standard units of feet rounded to the precision of the instrument used (ask judge for assistance in reporting value for your instruments).
- Each measurement method has a tolerance. If the team’s measurements fall outside this tolerance, they will be given a zero for that section of their measurement.

Measurement Tolerances

- Visual Estimation (Event 1): +/- 10 feet
- Pacing (Event 2): +/- 1.5 feet
- Taping (Event 2): +/- 0.5 feet
- Benchmark Leveling (Event 3): +/- 0.2 feet

Disqualifications

All electronic devices excluding approved materials are prohibited. These items include, but are not limited to, electronic distance measurement instruments (EDM), GPS devices, and cell phones. You may not use the calculator on a cell phone. Any team using an unapproved device during the competition will be disqualified.

Teams who do not supply the data and/or calculations used to determine the elevation of the specified point will be disqualified.

Any team communicating with a non-team member during the event or leaving the event area will be disqualified.
Concrete Frisbee Competition

Overview

- The primary composition of the concrete Frisbee must be Portland cement. All reinforcement must be non-metallic mesh (carbon and fiberglass mesh can be used). There is no restriction on the choice of aggregates.
- Molds such as an old plastic Frisbee, pie pan, or wooden forms may be used.
- Each team is allowed to bring two (2) Frisbees to the competition. The team must select one Frisbee to use prior to beginning the competition.
- The concrete Frisbee should be circular in shape, solid, and without any holes. The Frisbee must be smaller than a 12” x 12” x 2” box, and larger than an 8” x 8” box.
- Any external reinforcement must not create a shell around the Frisbee.
- Creative paint jobs are encouraged!

Rules

- Each participating team shall contain no more than four (4) students. Participants may be undergraduate or graduate students.
- The Frisbee must be built before the conference. The team is responsible to bring the Frisbee to the competition location on Saturday of the conference.
- Testing will be carried out at the conference on Saturday.
- Judges’ decision is final.

Scoring

Each team’s information will be entered into a pre-built Excel spreadsheet. Each team is encouraged to double-check the calculation when they are done competing.

Judging criteria is on the following page.
1. **Aesthetic (10%)**
   Will be based on uniformity, surface texture, finish, and overall paint job prior to competition. This judgement is at the judges’ discretion.

2. **Weight (25%)**
   Each Frisbee will be weighed prior to competition and be compared to the lightest Frisbee by the following equation. The lightest Frisbee will receive the highest points.
   \[ \text{Point for Weight} = \left( \frac{\text{Weight of Lightest Frisbee}}{\text{Weight of your Frisbee}} \right) \times 25 \]

3. **Distance Event (20%)**
   Boundaries will be marked and explained prior to starting the event. Each team will have three (3) opportunities to throw their Frisbee, by the same or different people. The best of the three will be counted. Measurement will be taken from the base line to where it first makes contact with the ground. If the Frisbee lands outside the boundaries or if the thrower’s hand crosses the baseline, the throw will be disqualified. The furthest throw will receive the total points.
   \[ \text{Point for Distance} = \left( \frac{\text{Your Throw}}{\text{Longest Throw}} \right) \times 20 \]

4. **Accuracy Event (20%)**
   A fixed target will be placed 50 feet away from the baseline. Each team has three chances of throwing the Frisbee, by the same or different people. The best of the three throws will be counted. Measurements will be taken after the Frisbee comes to rest from the target to the closest edge of the Frisbee. The shortest distance from the target will receive the total points.
   \[ \text{Point for Accuracy} = \left( \frac{\text{Shortest Distance to Target}}{\text{Your Distance to Target}} \right) \times 20 \]

5. **Durability (25%)**
   The Frisbee will be weighed after the competition and the residual weight will be used to calculate durability. Any Frisbee that has less than 50% of the original weight after the competition will receive a score of 0 for the durability portion.

   If \( \left( \frac{\text{weight after}}{\text{weight before}} \right) < 0.50 \), then durability point = 0
   \[ \text{Point for Durability} = \left( \frac{\text{Weight after Competition}}{\text{Weight before Competition}} \right) \times 25 \]
Volleyball
The volleyball playing surface will be grass or sand. The University of Idaho will provide the volleyballs and court.

The tournament will be single elimination. A random draw on Saturday before the games commence will determine the first round of games. Serve will be determined by a coin toss. No time-outs are allowed. The winner will be the team that reaches 15 points first or is ahead by two points after 20 minutes of playing. Rally scoring will be used (a team does not need to serve to score a point). The championship match will be the best 2 out of 3 games.

Any team failing to report to their game by the assigned time will forfeit the game. If an odd number of teams sign up, one lucky team will have a bye in the first round.

Players
- Each university may enter only one team.
- Team must have 5 or 6 players.

Contacting the ball
- Each team is allowed a maximum of three hits before hitting the ball over the net.
- The same player cannot hit the ball twice in a row.
- The ball may be played off the net.
- Players are NOT allowed to catch, hold, or throw the ball.
- Players are NOT allowed to hit or block the opponent’s serve.

In or Out?
- The ball is “IN” if any part of it hits the lines. (Imagine the ball is painted. If the ball left a mark that touches the lines, the ball is judged IN)
- Ball may touch the net on the serve. As long as it goes over it may be played.